Dynamic Chiropractic

Merck Manual Errs; FCER Is There to Catch It

Editorial Staff

The Merck Manual of Diagnosis and Therapy is perhaps the most popular and frequently consulted medical reference on the planet. First published in 1899, *The Merck Manual*, as it is commonly known, contains detailed information on medical conditions, diagnoses and suggested treatment options. Originally designed as an aid for physicians and pharmacists, the manual has even been translated into "plain language" and released as a home edition for consumers.

Recently, the Foundation for Chiropractic Education and Research (FCER) noted what it called a "glaring error" in *The Merck Manual*. In the 17th edition of the manual, under "Musculoskeletal and Connective Tissue Disorders - Nonarticular Rheumatism" (Chapter 59, Section 5), the subsection on the treatment of acute low back pain includes the following sentence:

"Manipulation may help pain caused by muscle spasm alone but may aggravate an arthritic joint or further rupture a disk and should thus be used with caution."

Anthony Rosner, PhD, director of research and education at FCER, Upon discovering this problematic language in the text, sent a letter (excerpted as follows) to Mark Beers, MD, editor of *The Merck Manual*:

Dear Dr. Beers:
...In this communication I am expressing my concern over a passage in Chapter 59, Section 5 of The Merck Manual which presents treatment scenarios for low back pain:
"Manipulation may help pain caused by muscle spasm alone but may aggravate an arthritic joint or further rupture a disk and should thus be used with caution."
Two lines of thought in this passage are problematic:
1. Cause of Pain:
The passage as it reads implies that spinal manipulation may relieve pain by acting as a muscle relaxant alone. It completely overlooks the role of *inflammation*, provoked in the case of disc pathology by the release of tumor necrosis factor alpha which triggers an immune-mediated inflammation, which in turn produces additional local noxious chemicals. Once healing begins and inflammation subsides, less pain is experienced.
Even in the case of muscle involvement, spasm is not the only mechanism responsible. Excessive stretch or overload must also be considered, the former producing nerve damage. A number of mechanisms in the central nervous system could suppress pain transmission, the best studies having been done at the level of the spinal cord. Whereas at least 42 randomized clinical trials have supported the effectiveness of spinal manipulation in relieving symptoms of back pain and improving functionality, I am aware of no references which address muscle spasm alone as suggested by your entry in the Manual.
2. Rupturing of Disk:
The statement concerning disk rupturing may have had its origins with the assertion made by Farfan over 34 years ago to the effect that rotational stress causes disk failure. This study demonstrated that in rotation, normal disks withstand an average of 23° and degenerated disks an average of 14° before failure. However, posterior facet joints limit rotation to a maximum of 2-3° and would have to fracture to allow any further rotation to occur. Any disc failures produced experimentally by torsion are caused by peripheral tears in the annulus, rather than prolapse or herniation. The safety of side-posture manipulation in the treatment of lumbar intervertebral disk herniations is described in detail in the literature review by Cassidy, et al.
For your reference, I have enclosed reprints of the Cassidy literature review plus two clinical trials which invoke spinal manipulation in the treatment of disc herniations. With no side-effects having been reported along with positive outcomes, the clear implication from these studies is that manipulation would be expected to *improve* rather than worsen disc herniations. Furthermore, manipulation, in marked contrast to the medical intervention to which it is compared, displays superior outcomes, far less cost, and no iatrogenic effects. A fourth reprint I have included demonstrates that, in patients with lumbar disc herniations, the recurrence of back pain occurs with equal frequencies in patients treated either with surgery or conservatively, the recommendation therefore being that conservative therapy rather than surgery should be the first option of treatment.
All of this is to suggest that the statement in the Merck Manual in its current form, regarding manipulation as a treatment option for herniated disks, is misleading and at odds with the indexed literature. In the interest of patient welfare and safety, I ask that you give this letter your most thoughtful attention and amend the statement in the Manual accordingly. ...

Approximately 10 days later, Dr. Rosner and the FCER received the following response from Dr. Beers:

> Thank you for your letter of July 21 regarding a sentence in the 17th edition of The Merck Manual in our discussion of back pain. We are currently revising that edition, with the next printing scheduled for release next year. Subsequently, revised editions of The Merck Manual will occur at a much quicker pace, including on our Web site.
> We have completely rewritten the chapter on back pain, and the statement you objected to is no longer present. While we do not go into great depth on the etiology of back pain, our new text emphasizes that the etiology is usually multifactorial, with muscle spasm being just one factor.
> We do not comment on the helpfulness of spinal manipulation but retained a statement of caution in those with the possibility of nerve damage from disk disease. This [cautionary] statement does not single out chiropractic interventions: we include them with almost every intervention, including the use of medications. In addition, and for the first time, we will have a separate entry on chiropractic.
> We thank you for your interest in improving the quality of The Merck Manual and appreciate your taking the time to write to us.

The complete, fully referenced text of Dr. Rosner's letter is available online at www.fcer.org/html/news/merck.htm.

Editor's note: Although encouraged by Dr. Beers' prompt response, Dr. Rosner emphasized that spinal manipulation does indeed appear to help disc herniations, as suggested by the literature. He added: "It would seem particularly important for a source such as *The Merck Manual* to lay out all reasonably documented alternatives."

OCTOBER 2004